



Program Executive Office  
Assembled Chemical Weapons Alternatives

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Assembled Chemical Weapons Alternatives  
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#### A Partnership for Safe Chemical Weapons Destruction

[www.peoacwa.army.mil](http://www.peoacwa.army.mil)



# Static Detonation Chamber Overview

The Program Executive Office, Assembled Chemical Weapons Alternatives, or PEO ACWA, program is currently exploring the use of explosive destruction technologies (EDT) to augment chosen technologies to destroy the chemical weapons stockpiles at the Pueblo Chemical Agent-Destruction Pilot Plant and Blue Grass Chemical Agent-Destruction Pilot Plant.

## What is an EDT?

EDTs use explosive charges or heat to destroy chemical weapons and do not require disassembly of the munitions. There are different types of EDTs, one of which is the Static Detonation Chamber.

## What is the Static Detonation Chamber?

The Static Detonation Chamber (SDC) is an EDT that uses thermal destruction methods to destroy munitions. The SDC is a nearly spherical, armored, high-alloy stainless steel vessel. The heat produced in this electrically-heated containment vessel detonates the munitions in order to destroy the agent and energetics. Applications of the SDC include the destruction of recovered chemical munitions in Munster, Germany, and the selection by the U.S. Army Chemical Materials Activity to augment the Anniston Chemical Agent Disposal Facility.

## How does it work?

Chemical munitions are placed in a carrier, conveyed to the top of the SDC vessel and fed into the electrically heated detonation chamber. The high heat (approximately 600 degrees Celsius or 1,100 degrees Fahrenheit) detonates the munition, and the chemical agents and energetics are destroyed by the shock and thermal decomposition. Gases generated as a result of the detonation are treated by an off-gas system that includes a flameless thermal oxidizer that converts carbon monoxide and hydrogen to carbon dioxide and water.

The SDC produces no liquid waste. Scrap metal removed from the vessel may be recycled and salts from the off-gas system are treated and disposed of in compliance with applicable state and federal regulations.

The SDC is manufactured by Dynasafe AB of Karlskoga, Sweden.

For additional information on EDTs, including the SDC, and their application, please refer to the National Research Council's report *Assessment of Explosive Destruction Technologies for Specific Munitions at the Blue Grass and Pueblo Chemical Agent-Destruction Pilot Plants*, which is available at [www.nap.edu](http://www.nap.edu).

For more information about PEO ACWA, visit [www.peoacwa.army.mil](http://www.peoacwa.army.mil).



*The Static Detonation Chamber is an explosive destruction technology that uses an electrically heated vessel to destroy chemical munitions.*